

# US-2 HIGHWAY CORRIDOR ACCESS MANAGEMENT PLAN



*PREPARED FOR:*  
*GOGEBIC COUNTY ACCESS MANAGEMENT TEAM*  
*WESTERN U.P. PLANNING & DEVELOPMENT REGION*  
*MAY 2006*



U.P. ENGINEERS & ARCHITECTS, INC.

## **ACKNOWLEDGEMENTS**

The Gogebic County Access Management Team served as the steering committee for the U.S 2 Corridor Access Management Study. The following persons provided review, local insight and coordination with the development of this plan.

Pat Merrill  
City of Ironwood

Richard Estola  
Ironwood Township

Tom Chatel  
City of Bessemer

Jeff Randall, Walter Rickard  
Bessemer Township

Mike Foley  
Gogebic County Road Commission

Jim Stingle  
Western Upper Peninsula Planning and Development Region (WUPPDR)

Vince Bevins, Ben Feldhausen  
Michigan Department of Transportation

The study was prepared by planners and transportation engineers with  
U.P. Engineers & Architects, Inc.

**US - 2 Corridor**



**TABLE OF CONTENTS**

<b>CHAPTERS</b>	<b>Page</b>
Acknowledgments	1
Table of Contents	2
Introduction	4
The Value of Access Management	7
Project Goals	8
The Land Use and Transportation Relationship	9
Local Master Plans and Zoning	10
The U.S. 2 Corridor Access Management Planning Process	11
U.S. 2 Corridor Description	12
Access Management Concepts	28
Recommendations	33
References	33
Proposed Corridor and Access Improvements	34
Access Management Ordinance	43
 <b>FIGURES</b>	
Figure 1. U.S. 2 from Ironwood to Wakefield	4
Figure 2. U.S. 2 – City of Bessemer Business District	5
Figure 3. U.S. 2 – City of Bessemer Residential Area	6
Figure 4. Access Management Over Time	7
Figure 5. Elements of Pedestrian Discomfort in Winter Cities	8

Figure 6 The Transportation Land Use Cycle	9
Figure 7. Teams of Local Management	10
Figure 8. Tools for Public Involvement	11
Figure 9. Location of Study Area	12
Figure 10. U.S. 2 Average Daily Traffic Year 2004	13
Figure 11. U.S. 2 Accident Data 1994 - 2003	14
Figure 12. Driveway Crashes by Movement	15
Figure 13. Map1. U.S. 2 Collision Data 1994-2003	16
Figure 17. Map1. Land Use	20
Figure 21. Map1. Access Points	24
Figure 25. Alternate Modification to a 3-Lane Traffic	28
Figure 26. Left-Turn Lane and Vehicle Safety	29
Figure 27. Alternate Left-Turn / Emergency Lane and Bicycle Lanes	30
Figure 28. High-volume traffic Roadways	31
Figure 29. Pedestrian-safe roadway	32
Figure 30. Ten Principles of Access Management	33
Figure 31. Shared Driveways and Connected Parking Lots	34
Figure 32. Frontage Roads and Rear Service Roads	35
Figure 33. US-2	36
Figure 34. Street Section	37
Figure 35. US-2	38
Figure 36. US-2 Ironwood Corridor Access Management Strategies	39



## INTRODUCTION

The U.S. 2 Corridor plays an important role in Gogebic County and the State of Michigan. The highway and communities along it provide the major western gateway to Michigan. U.S 2 serves an important role in the transportation of goods across the northern tier of states in the Midwest United States.

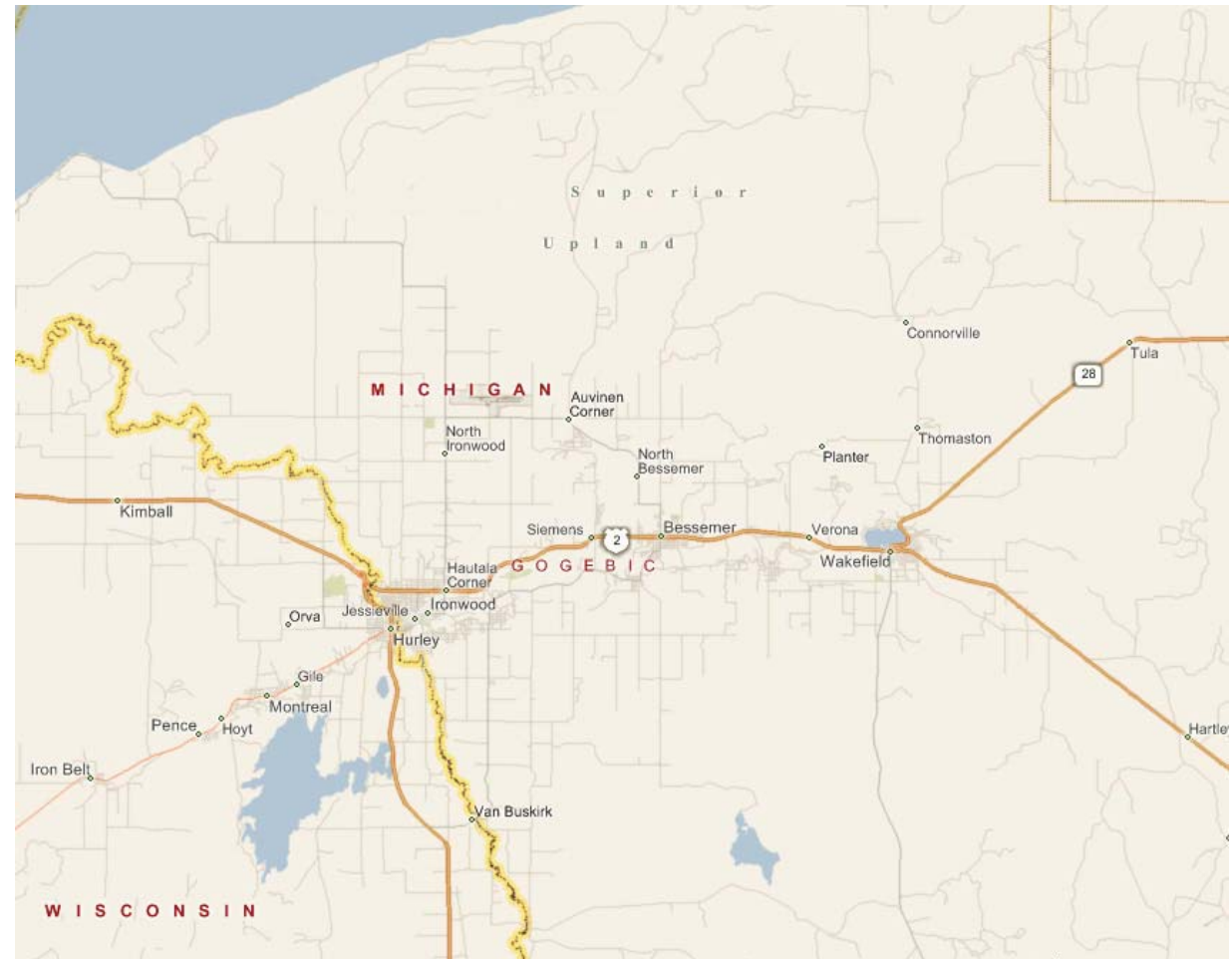
The U.S 2 Corridor also provides an important link in transportation across Canada, as many travelers and trucks enter the United States as a shortcut around the north shore of Lake Superior.

U.S 2 is a major transportation route in Gogebic County, providing the primary access and transportation route between the communities of the City of Ironwood, Ironwood Township, City of Bessemer, Bessemer Township and the City Wakefield, as well as the communities of eastern Gogebic County and Hurley, Wisconsin to the west.

Originally, U.S 2 followed a circuitous route through the cities and downtowns of Ironwood, Bessemer and Wakefield. Later, as automobile traffic increased, a new corridor route was planned and constructed, taking through-traffic away from the downtown areas. The corridor was later constructed to a five lane configuration in the rural area with four lane segments in Bessemer and Ironwood.

- A number of historical factors have influenced the development adjoining the U.S 2 Highway Corridor in Gogebic County:
- The segment was an important route for cross-Canada traffic before improvements were made to Canada Highway 17, along the north shore of Lake Superior.

Figure 1. US-2 from Ironwood to Wakefield





## PROJECT: WUPDR – US-2 IRONWOOD CORRIDOR ACCESS MANAGEMENT PLAN

- A number of motels, restaurants and tourist-related businesses were developed in response to this traffic along the U.S. 2-Ironwood corridor.
- The U.S 2 Corridor provided access to and serviced the rapid growth in the 1960's of the "Big Snow Country" ski resorts. Lodging and service businesses already in existence along the corridor flourished with this new winter tourism development.
- In the cities of Ironwood and Bessemer, the new highway was routed through an existing residential area. Many of these homes had existing driveways, which has contributed to today's access management issues.
- Following the national trend toward highway-oriented strip development, the U.S. 2 Corridor provided good access and relatively cheap land for expansion of retail and other service business, particularly in the cities of Ironwood and Bessemer.

As the development of adjoining lands progressed, the primary functions of moving traffic safely at design speeds and linking the communities of the U.S 2 Highway Corridor has changed considerably. Separate driveways and access points to businesses and homes have created numerous turning movement opportunities that the highway was not designed to accommodate.

Figure 2. US-2 – City of Bessemer – Business District



Land use, if not properly coordinated and managed, can dramatically alter and diminish the primary functions of the highway. If the roadway segment becomes so congested that the primary functions become diminished, the highway corridor may be moved again with a “bypass” resulting in negative business impacts, property value, and tax consequences for the communities bypassed. In addition, the public cost of acquiring land and constructing a new bypass are enormous.

The purpose of the U.S 2-Ironwood Highway Corridor Access Management Plan is to identify solutions to existing traffic and access conflicts and issues. The plan will establish a process for managing future access.

This approach will improve safety, capacity, as well as allow for future economic development of adjacent properties while preserving the primary functions of the U.S 2 Corridor.

**Figure 3. US-2 – City of Bessemer –Residential Area**



## THE VALUE OF ACCESS MANAGEMENT

When access to highway corridors is planned and managed, a number of benefits accrue to local communities, transportation agencies, and the public interest. The primary benefits are discussed below:

### **Access Management improves traffic safety.**

Limiting the number and locations of driveways and access points minimizes the number of conflict points. MDOT traffic and safety statistics prove the relationship between access movements and crashes.

### **Access Management decreases travel time and reduces motorist costs.**

Fewer delays resulting from good traffic flows reduces travel time.

### **Access Management maintains traffic capacity and roadway functions.**

Appropriate access management preserves the road's capacity to move vehicles at the design speed and extends the life-cycle of the road.

### **Access management improves access and the value of private land development.**

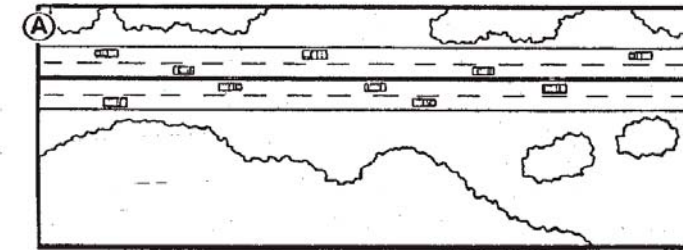
Managed site access results in better designed site plans that provide safe access to each property. These sites are more attractive to customers, as they are frequently easier and safer to access.

### **Access Management improves the attractiveness of a community.**

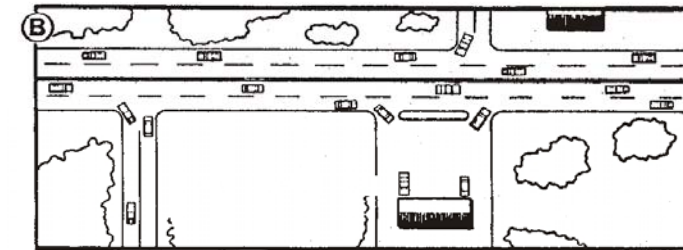
A safe and pleasant driving experience through a community's highway corridor with clear and safe turning movements, more landscaping, and fewer stops adds to the perceived quality of life and attractiveness for economic development.

Figure 4. Value of Access Management over time

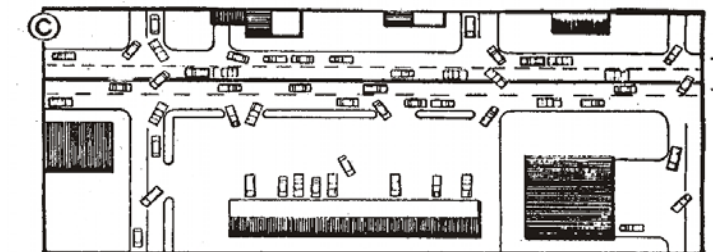
#### **Cumulative Impact of Increased Roadside Development ...**



#### **What happens when unrestricted development takes place ...**



#### **over time ...**



Source: MDOT Access management Guidebook

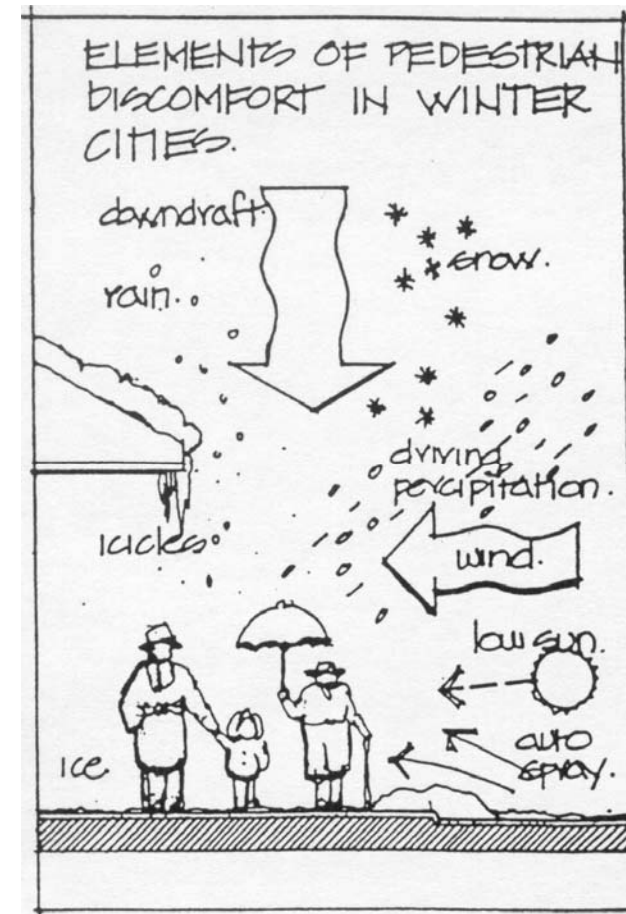


## PROJECT GOALS

The following goals have been developed to guide the U.S. 2 Corridor Access Management Program.

- Improve the traffic safety of the U.S 2 Corridor.
- Maintain, enhance and/or improve the traffic carrying capacity of U.S. 2.
- Coordinate state and local infrastructure investments in the highway, intersecting roadways, communities and adjacent properties.
- Improve local government planning response to U.S. 2 corridor issues.
- Consider winter and snow management in access, site plan design and proposed highway improvements.
- Create and maintain a coordinated site plan review to ensure that access management principles are implemented along the U.S. 2 corridor.
- To develop a coordinated site plan review process among local governments and state and local road agencies.
- To promote appropriate economic development of the U.S. 2 Corridor while meeting the goals of the corridor plan.
- Provide for safe and adequate non-motorized access along the corridor.

Figure 5. Elements of pedestrian discomfort in Winter Cities

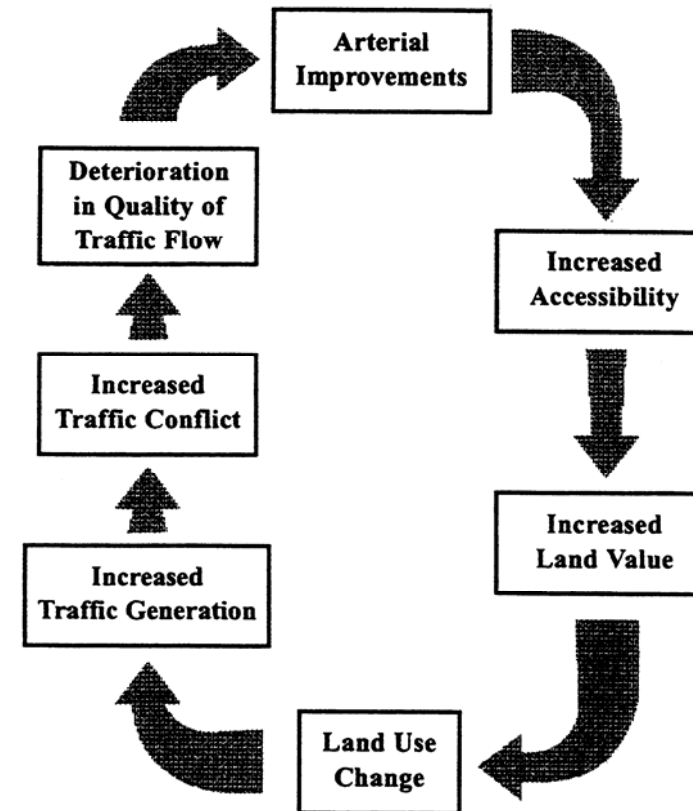


## THE LAND USE AND TRANSPORTATION RELATIONSHIP

The relationship between the capacity and use of a transportation facility and the value and intensity of development is direct. As land develops and the road facility becomes congested, the safety of the facility begins to decline. To improve safety and traffic flow, the roadway is improved, perhaps with additional lanes, traffic signals, right/left turn lanes.

While these improvements will improve capacity and safety, the effect is to attract more traffic which attracts additional development. Over time, the cycle is repeated, the roadway becomes congested and is in need of improvements. Eventually, a maximum capacity is achieved and options for relocation of the highway and bypassing all the development are explored

Figure 6. The Transportation Land Use Cycle



The Transportation Land Use Cycle

Source: National Highway Institute, Course 15255, FHWA, 1998, p. 1-18.



U.P. ENGINEERS & ARCHITECTS, INC.

## LOCAL MASTER PLANS AND ZONING

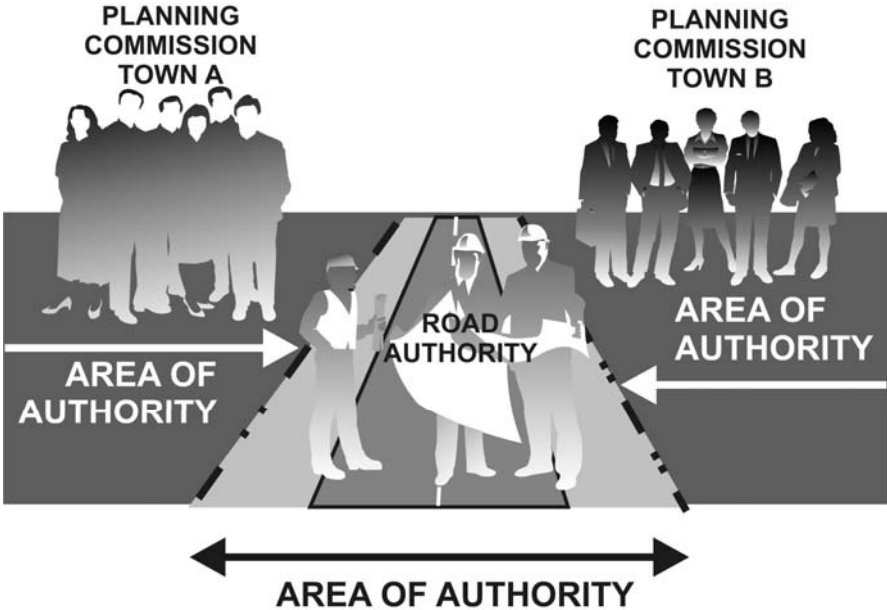
Local planning commissions, master or comprehensive plans and zoning ordinances provide the means upon which a community may exercise some management and control over access to properties adjacent to U.S 2. A major effort of this planning process will be to work with each local government to assist with the preparation of appropriate zoning, access management and site plan requirements. These tools are key to implement the ideas and planning strategies for the highway corridor.

Of the four local government units included within the study area, all have zoning ordinances. Only one has site plan review as part of the existing ordinance. Only the City of Ironwood has a Master Plan.

The table below summarizes existing planning and zoning frameworks in place for implementation of the Access Management Plan.

Local Unit	Master Plan	Zoning Ordinance	Site Plan Review
Ironwood City	Yes (1981)	Yes	Yes
Ironwood Township	No	Yes	No
Bessemer City	No	Yes	No
Bessemer Township	No	Yes	No

Figure 7. Teams of Local Management



Source: MDOT Access Management Guidebook

## THE U.S. 2 CORRIDOR ACCESS MANAGEMENT PLANNING PROCESS

The development of the U.S 2 Corridor Access Management Plan involved a committee of local officials representing the local government jurisdictions of Ironwood City, Ironwood Township, Bessemer City and Bessemer Township. The Michigan Department of Transportation participated in committee meetings and provided funding for the project through the Western Upper Peninsula Planning and Development Region. Other representatives of the various city and township boards and planning commissions also attended meetings of the committee, which were open to the public.

A public and local official Access Management Training program was conducted on April 19, 2006. The purpose of this meeting was to receive public comment on the access management issues and the draft plan document, as well as provide educational information on the benefits of highway access management and how this will fit into the community's existing planning and zoning process.

Following the educational program, the consultant worked with each local government jurisdiction on developing the local ordinance modifications to enable the management of access along the U.S 2 Highway Corridor.

Figure 8. Tools for Public Involvement

### *U.S. 2 Highway Corridor and Access Management Plan*

Wednesday, April 19, 2006, 6:30 p.m.

Bessemer City Hall Auditorium



The purpose of the meeting is to receive public comment on U.S. 2 safety and access management issues, as well as provide educational information on the benefits of highway access management and how this fits into a community's existing planning and zoning process.



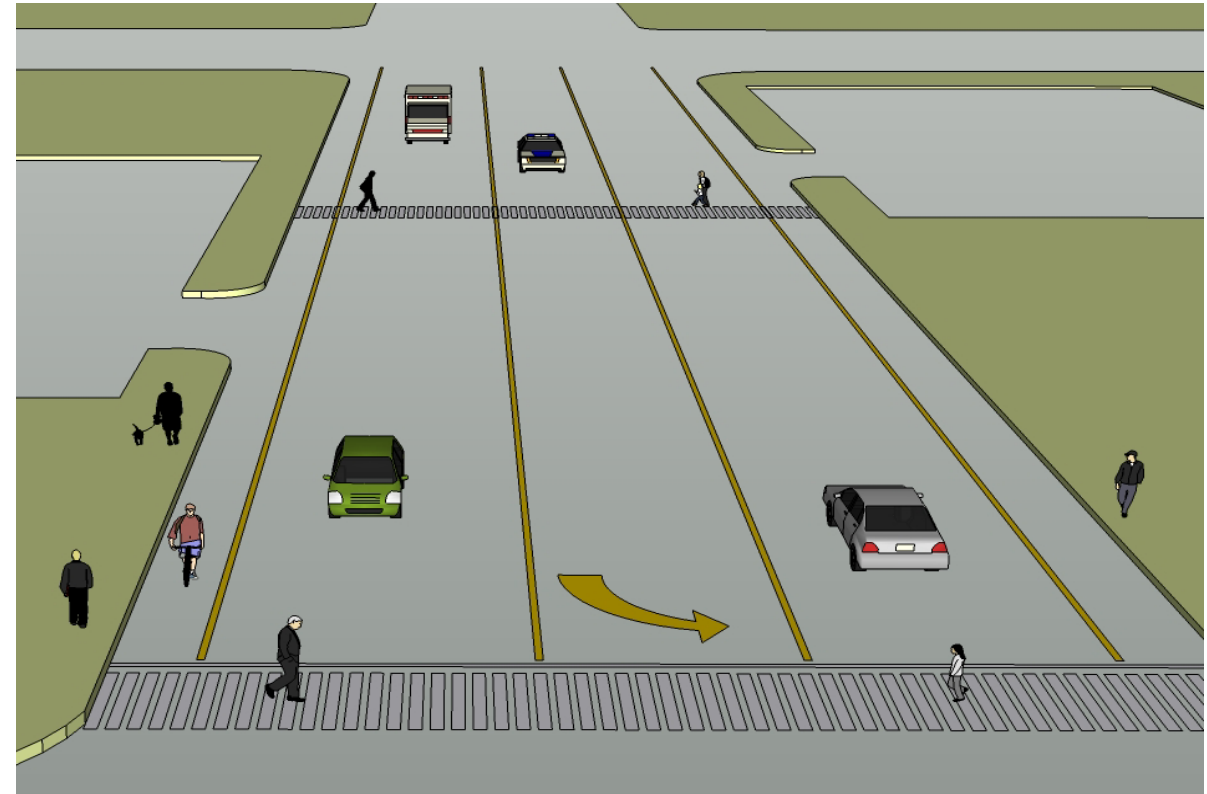


Prior to making a recommendation on this lane reduction for the Ironwood corridor, the following questions should be answered:

- Are the existing averages speeds appropriate given corridor land uses?
- Does speed variability create safety concerns and noise problems?
- Is the road near pedestrian activity areas, such as parks and schools or where improving the pedestrian environment is a priority?
- Is the road an existing or planned bicycle corridor
- Do high crash rates exist due to turning movements, excessive weaving, and /or stop and go traffic?
- How will this configuration affect the through truck traffic on US-2?
- What alternative routes may be affected by local traffic avoiding the corridor?

These questions will determine what the primary purpose of the corridor is.

**Figure 29. Pedestrian-safe roadway**



## **RECOMMENDATION**

Based on the above discussion, the four-lane reduction to three-lane in the city of Bessemer would be beneficial. The low traffic counts, high pedestrian usage, low number of driveways and potential for bicycle traffic meet the criteria spelled out in the previous section(s).

As noted, the Ironwood corridor should be studied more thoroughly prior to making a recommendation.

## **REFERENCES**

1. Michigan Intersection Safety Strategy and Near-Term Action Plan, Governor's Traffic Safety Advisory Commission, February 2004.
2. Urban Four-Lane Undivided to Three-Lane Roadway Conversion Guidelines, Knapp, Giese, and Lee, Iowa State University, 2003.

**Figure 30. Ten Principles of Access Management**

1. Determine roadway's type and function.
2. Identify main access points to major roads.
3. Define intersection hierarchy.
4. Locate signals to favor thorough traffic movement.
5. Preserve areas close to intersections as clear as possible.
6. Limit number of conflict points.
7. Increase the spacing between driveways and between access points.
8. Define turning lanes at intersections
9. Define turning lanes at mid block
10. Provide supporting or secondary roadways.

Source: Access management Manual RTB 2003

